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Washington, DC 20548

Resources, Community, and  
Economic Development Division

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The Honorable Robert F. Bennett  
United States Senate

Subject: NASA's Administrative Review of a Patent Infringement Claim

Dear Senator Bennett:

On February 7, 2000, the National Aeronautics and Space Administration (NASA) responded to an inventor's complaint that the agency had used his patented technology without approval, compensation, or acknowledgment. NASA told the inventor that it had conducted an administrative review of the matter and concluded that there was no infringement. The inventor contacted you about this matter, and you asked us to review NASA's administrative action on his complaint.

As agreed with your office, this report addresses (1) whether NASA adhered to established procedures in conducting its administrative review of the inventor's infringement claim and (2) what criteria NASA used in reaching its decision. As also agreed, we take no position as to whether NASA infringed the inventor's patent.

**Results in Brief**

NASA reviewed the inventor's complaint in accordance with its procedures governing administrative reviews of patent infringement claims. Even though the inventor never filed an official claim, NASA treated his complaint as an infringement claim because it had no other mechanism for investigating allegations of infringement and wanted to remove any doubt that it had infringed the patent in question. Also, NASA and the inventor agree that the agency's decision to treat his allegation as an infringement claim probably will work to his advantage if he chooses to bring an infringement suit. The inventor was correct that NASA used the same attorney to conduct the administrative review that earlier had been involved in licensing negotiations on his patent. While this does not violate NASA's procedures, it is inconsistent with federal internal control standards, and NASA said it would separate the duties if such a case arose in the future.

NASA applied federal patent law to reach its decision. NASA interpreted the law as providing that only the patent "claims"—those specific elements set out in the patent

that make the invention novel—can be infringed. After surveying the operations of its field units, NASA concluded that none of its systems—including the Mars Pathfinder landing system and the TransHab Design Concept cited by the inventor—infringed the claims in the inventor's patent. NASA's decision completes its administrative review process. If the inventor wishes to pursue his complaint, his recourse is to file a claim with the U. S. Court of Federal Claims.

## **Background**

A patent is a grant made by the government to an inventor, conveying and securing to him or her the exclusive right to an invention for a term of years. The Patent and Trademark Office (PTO) grants patents in the United States. By its terms, a patent gives an inventor the right to exclude others from making, using, or selling the invention for a specified period, in this instance 17 years. A person infringes another's patent when he or she makes, uses, or sells the subject invention without permission during the patent term.

On June 19, 1990, PTO granted U.S. Patent No. 4,934,631 to the inventor. The patent describes the invention as a "lighter-than-air type vehicle comprising a framework and a series of inflatable lift bags secured to said framework." The lift bags were designed to contain heating elements and a gas, such as hydrogen or helium, in contact with these heating elements.

Believing his technology could be adapted successfully for a broad range of military and civilian projects, the inventor had attempted since 1989 to market his invention to the government. He said that certain agencies, including NASA, expressed interest but declined his offers to license the invention or enter into a contract with him to develop and use his technology.

In 1997, the inventor saw drawings of the Mars Pathfinder landing system developed by NASA and noted that the system used inflatable bags that he believed were similar to those described in his patent. He concluded that NASA had adapted and was using his invention without approval, compensation, or acknowledgment. After further research, he concluded that NASA also was using bags similar to his own in its TransHab Design Concept, which features inflatable structures that can be used to house personnel and equipment in space.

On February 26, 1997, the inventor contacted the NASA Administrator and complained that NASA had used his invention without his approval. The complaint was referred to the Director of the Infringement Division in the Office of the Associate General Counsel for Intellectual Property. After obtaining the inventor's approval, NASA docketed the matter as a "license to proffer" on March 7, 1997, giving NASA permission to send the patent to its various units to determine whether they had an interest in obtaining a license to use the technology. On July 30, 1997, the Director of the Infringement Division sent a letter to the inventor informing him that the agency had no interest in obtaining a license.

On March 31, 1998, the inventor asked the NASA Inspector General to conduct an investigation into NASA's use of his patented technology. The Inspector General conducted a preliminary investigation and concluded the complaint constituted a claim of infringement. On October 14, 1999, the Inspector General referred the case to the Associate General Counsel for Intellectual Property, and on November 3, 1999, the Director of the Infringement Division notified the inventor that it was treating his complaint as a patent infringement claim and was initiating a formal administrative review.

On February 7, 2000, the Director of the Infringement Division notified the inventor by letter that he had completed the administrative review of the infringement claim and found no evidence of infringement by NASA. Accordingly, he said that NASA was denying the inventor's claim and that, if the inventor was not satisfied with this result, his recourse was to file a lawsuit for patent infringement. The Director also pointed out that the statute of limitations—which by law had been suspended, or “tolled,” during the administrative review—again would begin to run.<sup>1</sup>

The inventor is not satisfied with NASA's response. From a procedural standpoint, he says he does not understand why NASA chose to treat his complaint as a request for a claim of patent infringement when he had not made a formal request for an administrative review. He also is concerned that the Director of the Infringement Division, who prepared NASA's response, was the same attorney to whom he had spoken over the years about NASA's possibly licensing his invention.

The inventor also disagrees with the criteria NASA used in reaching its decision. He believes that NASA is interpreting the case law on patent infringement too narrowly because, under NASA's interpretation, one could easily “invent around” almost any patent. He said that, in addition to considering the patent claims, NASA should consider such factors as the description and specifications set out in the patent. Moreover, the inventor disagrees with NASA's (1) characterizing his invention as a “dirigible” or a “blimp” and (2) comparing it with single-walled inflatable structures covered by earlier patents. He says NASA did not address his basic complaint that the agency developed an interest in using double-walled inflatable airbags—a primary feature of his invention—only after he brought the potential uses to the agency's attention.

### **NASA Followed Its Procedures in Conducting the Administrative Review of the Infringement Claim**

NASA followed its established procedures in reviewing the inventor's complaint. While NASA was not required to treat the complaint as an infringement claim, it had the authority to do so, and its use of the formal administrative review process was

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<sup>1</sup>In its response to the inventor, NASA also noted that the patent had expired. The patent expired on June 19, 1999, because the inventor did not pay the required maintenance fees. Subsequently, however, he filed a petition for reinstatement, paid the fees, and on May 22, 2000, was informed by PTO that his patent was reinstated.

reasonable under the circumstances. The inventor made a written request for an investigation, accusing NASA of infringing his patent and, according to NASA officials, the administrative review is NASA's only mechanism for handling such a complaint. Moreover, while NASA found no infringement on its part, the decision to conduct a formal review may be to the inventor's benefit, as it provides him with additional time and the agency's position on the record if he decides to pursue the matter in the courts.

NASA's Administrative Review, While Not Required, Was Conducted in Accordance With Its Procedures

NASA's procedures for administratively reviewing a claim of patent infringement against the agency are set out in an attachment to a September 29, 1987, letter to all NASA installations by the Associate General Counsel for Intellectual Property. According to the Director of the Infringement Division, these requirements were modeled after those established by the Department of Defense (DOD). He said that, like the DOD regulations, NASA's procedures are intended to provide both the claimant and the agency with an alternative to litigation, although the administrative process is not a prerequisite for litigation. The procedures provide for no administrative appeal; if NASA finds no infringement, the claimant's recourse is to sue in federal court.

NASA's procedures set out specific elements for initiating an administrative review. There must be a claim in writing that makes an allegation of infringement, requests compensation, cites the patent that is believed to have been infringed, and designates the item or process that is alleged to have infringed. The claimant also is encouraged to provide information such as identification of procurements that involve the infringing items, detailed descriptions of the infringing items, a list of persons to whom notices of infringement have been sent, and a listing of all government contracts under which the claimant has performed work. When NASA has determined that it will review a claim, its procedures instruct the Office of the Associate General Counsel for Intellectual Property to docket the case and to inform the claimant of this action. The Associate General Counsel then contacts those NASA installations that are primarily concerned with the subject matter of the alleged infringement and instructs them to determine whether an infringement occurred. Ultimately, the Associate General Counsel responds to the claim in writing, setting out specific reasons if the claim is denied. NASA followed these procedures in this case.

The inventor said that, although he asked NASA for an investigation, he never presented an infringement claim to NASA that would have initiated a formal administrative review. Part of his reason for asking for the investigation was that he did not know or have access to much of the information necessary to determine whether an infringement had occurred. He noted, for example, that he had hoped to obtain details on the technology being used in the Mars Pathfinder and TransHab projects.

The Director of the Infringement Division agreed that, although NASA was not required to initiate a formal administrative review, its decision to do so was proper under the circumstances. He noted that the inventor had requested in writing that NASA conduct

an investigation of his complaint. He said that NASA had decided to treat the request for an investigation as an infringement claim because it had no other mechanism to investigate a complaint and wanted to be positive that it had not, even inadvertently, infringed the inventor's patent. The Director said that NASA wanted to give the inventor every benefit of the doubt and that treating the request for an investigation as an infringement claim ensured that the inventor's concerns received a complete review.

#### Director Had Authority to Conduct the Administrative Review

A related concern raised by the inventor was that the Director of the Infringement Division—who conducted the administrative review of the infringement claim—was the same attorney with whom the inventor had talked on earlier occasions about a possible contract or licensing arrangement with NASA. Thus, he questioned the Director's impartiality in conducting the administrative review.

The Director of the Infringement Division agreed that he had previous contact with the inventor about his patent. However, he said that this was the result of his having two roles within the division. One role is to act as an intermediary for persons who bring patents to NASA seeking licensing arrangements. The other is to conduct administrative reviews on claims brought by persons who believe NASA may have infringed their patents. He noted that the two roles are complementary and have the same objective—to ensure that NASA avoids even the appearance of infringing another's invention. The Director also noted that he is the only attorney assigned to the Infringement Division, which receives no more than two to three patent infringement claims per year.

In his role as intermediary for persons seeking licensing arrangements, the Director noted that he did not make the decision himself on whether to seek a license but rather sought assistance from the NASA units that might use or be interested in the particular technology. When these units expressed no such interest, the Director was the person who relayed this information to the inventor.

The Director said that in his second role, he conducted the administrative review on the inventor's claim. He said that it did not occur to him that someone might question his impartiality, since he is always the attorney who conducts the administrative reviews. He said that there is no special NASA policy or procedure covering a situation in which the Director had previous involvement with a claimant. The Director also noted that his supervisor, the Associate General Counsel for Intellectual Property, reviewed and approved his decision and the written response before it was sent to the inventor.

We pointed out to the Director of the Infringement Division that, even though he appears to have followed established procedures, his dual role involving the inventor's patent does not appear to be in accordance with the guidelines on the separation of duties set out in the *Comptroller General's Standards for Internal Control in the Federal Government*, which provides as follows:



“Key duties and responsibilities need to be divided or segregated among different people to reduce the risk of error or fraud. This should include separating the responsibilities for authorizing transactions, processing and recording them, reviewing the transactions, and handling any related assets. No one individual should control all aspects of a transaction or event.”

Both the Director and the Associate General Counsel for Intellectual Property said that the separation of duties issue had not occurred to them at the time. They noted that this was the first case in their experience in which the Director had handled a potential licensing arrangement and an infringement claim on the same patent. The Associate General Counsel said that, if such a case occurs again, he will assume responsibility for the administrative review.

#### Administrative Review Appears to Benefit the Inventor

The Director of the Infringement Division said that NASA's decision to treat the request for an investigation as an infringement claim probably worked to the inventor's advantage. Under 35 U.S.C. 286, there is a 6-year statute of limitations on patent infringement by the federal government. However, the statute is suspended, or “tolled,” during the administrative review of an infringement claim. Thus, the time taken by NASA to review the inventor's complaint allows him a longer period in which to file a lawsuit and for which to claim damages. Also, NASA's procedures require the agency to inform a claimant in writing of the basis for denying a claim. By issuing a formal response, NASA provided the inventor with its position, which he could then use in preparing a lawsuit.

We discussed with the inventor the Director's position on the need for and potential benefits of the administrative review. The inventor said that while he did not agree with the need for an administrative review, the way the review was conducted, or the review's finding, the process probably works to his advantage in that he has more time to file a lawsuit and has NASA's position on the record.

#### **NASA Used Established Criteria in Reaching Its Decision**

In deciding whether it infringed the inventor's patent, NASA applied federal patent law that only the “claims” in a patent can be infringed. After identifying the relevant elements in each of the inventor's two claims, NASA asked its various operating units to determine whether any of the agency's systems—including the Mars Pathfinder landing system and the TransHab—had used technology similar to that protected by the subject patent. On the basis of the feedback from these units, NASA determined that there was no infringement.

#### NASA Examined the Claims in the Inventor's Patent

Under the provisions of 35 U.S.C. section 112, a specification as part of the application for a patent “shall conclude with one or more claims particularly pointing out and

distinctly claiming the subject matter which the applicant regards as his invention." Thus, a patentee must "claim" his invention by stating his claims in his application.

Typically, each claim in a patent application consists of several elements. Those claims PTO approves become a part of the patent that is issued. In turn, infringement of a patent is established by showing that an accused, or allegedly infringing, device or process matches or infringes a claim. For this purpose, each element of a claim is deemed to be necessary to the patentee's statement of his or her claim, and each element or its equivalent must exist in the accused device or process for infringement to be proved.<sup>2</sup>

NASA applied these rules in conducting its administrative review. According to the Director of the Infringement Division, his first step in determining whether an infringement occurred was to identify the precise elements actually "claimed" in the patent. He noted that the inventor's patent included only two claims, the first of which is stated as follows:

"An inflatable air bag for lighter-than-air type vehicles, having a flame resistant liner, said air bag being provided with an interior heating element and a lighter-than-air gas in intimate contact with said heating element, said air bag also including sealed tubular portions communicating with the exterior and passing through opposite ends of said air bag for receiving external structural mounting support thereat."

The inventor's second claim is for a "combination" and is stated as follows:

"An elongate vehicle including, in combination: a framework provided a door and a forwardly facing window; a series of inflatable lift bags secured to and about said framework, said lift bags containing a lighter-than-air gas and being individually provided with respective interior heating element means for variably heating and thereby variably expanding said gas within each of said lift bags; means for heating said heating elements coupled thereto; propulsion structure coupled to and disposed outside of said framework; and means mounted to and within said framework for supplying power to said propulsion structure, and wherein said air bags are each provided with integral tubes communicating with the exterior at opposite ends of said air bags, said air bags being mounted to said framework by portions of said framework passing through said tubes."

The Director said that these two claims provide few exclusive rights to the inventor, as they give him rights only against inventions that include those specific combinations of elements identified in the claims. For example, the fact that the inventor identifies items such as inflatable air bags or flame-resistant liners – items covered by earlier patents or in the public domain – does not mean that his patent protects inflatable air bags or

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<sup>2</sup> *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17 (1997).

flame-resistant liners. The patent only protects the completely described structures claimed, of which inflatable air bags with flame resistant liners are but components.

To more fully understand the nature of the inventor's complaint, the Director also obtained PTO's examination, or "prosecution," history for the patent. He found that, originally, the patent application had included 14 claims. However, PTO questioned the patentability of all but two of these because they were not unique or would be obvious to someone skilled in the particular field of technology. The inventor then amended his application, leaving only the two claims that eventually were approved by PTO and appear in the issued patent.

#### NASA Found No Evidence of Infringement

After determining the specific elements covered by the claims in the inventor's patent, the Director of the Infringement Division, by memorandum dated November 3, 1999, contacted all NASA operating units that might be aware of any NASA technologies that were similar to the inventor's two claims. He asked them to conduct an investigation to determine "whether or not you believe that his alleged claim for patent infringement is valid...." He also asked them specifically to analyze whether any of the technologies so identified were involved in either the Mars Pathfinder landing system or the TransHab project. He advised them that the inventor had earlier submitted the patent to NASA and offered to license it to the agency.

The Director said that none of the NASA units identified any technologies or uses consistent with the claims in the inventor's patent. He concluded that, because there were no devices that matched the claims, there was no infringement. He discussed his reasoning in NASA's response to the inventor and, in addition, set out the specific differences between the claims in the inventor's patent and the technology used in the Mars Pathfinder landing system and the TransHab project. The Director said that his February 7, 2000, response to the inventor ended NASA's administrative review of the inventor's complaint. He said that if the inventor is still not satisfied, his only remaining avenue for relief is through the federal courts.

As stated, we do not take a position on whether NASA's conclusion is correct. Under 28 U.S.C. section 1498, the inventor's recourse is to file a claim with the U. S. Court of Federal Claims if he is not satisfied with the agency's decision.

#### **Agency Comments**

We provided a draft of this report to NASA for its review and comment. NASA concurred with the report's findings. NASA reiterated that, in the future, the Associate General Counsel for Intellectual Property would have responsibility for administrative reviews of patent infringement claims in those cases where the Director of the Infringement Division was involved in licensing discussions on the same patent. (See enc. I for NASA's comments.)



### Scope and Methodology

To meet our objectives, we met with and examined records provided by the inventor, the Director of NASA's Infringement Division, and NASA's Associate General Counsel for Intellectual Property. We also obtained data from PTO's patent records. In addition, we reviewed NASA's procedures and relevant federal statutes, regulations, and case law related to patent examination and patent infringement.

We conducted our work from April through July 2000 in accordance with generally accepted government auditing standards.

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As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days after the date of this letter. At that time, we will provide copies to the appropriate congressional committees; interested Members of Congress; the Honorable Daniel S. Goldin, Administrator, National Aeronautics and Space Administration; and the Honorable Jacob J. Lew, Director, Office of Management and Budget. We will also provide copies to others upon request.

If you have any questions about this report, please contact Derek Stewart, Acting Associate Director, or me at (202) 512-3841. Other key contributors to this report were Frankie Fulton, John Hunt, Bert Japikse, and Deborah Ortega.

Sincerely yours,

A handwritten signature in black ink that reads "Jim Wells". The signature is written in a cursive, flowing style.

Jim Wells  
Director, Energy, Resources,  
and Science Issues

Enclosure

Enclosure

**Comments From the National Aeronautics and Space Administration**

National Aeronautics and  
Space Administration  
**Office of the Administrator**  
Washington, DC 20546-0001



Mr. Derek B. Stewart  
Acting Associate Director, Energy,  
Resources, and Science Issues  
Resources, Community, and  
Economic Development Division  
United States General Accounting Office  
Washington, DC 20548

AUG 3 2000

Dear Mr. Stewart:

NASA appreciates the opportunity to comment on your draft report entitled "NASA's Administrative Review of a Patent Infringement Claim (GAO/RCED-00-240R)" that was prepared for Senator Robert F. Bennett.

NASA would like to thank the General Accounting Office for the professional manner in which this investigation was conducted by your staff. The only clarifying comment that NASA would like to make is that while the same attorney conducted evaluations of both the license proffer and the administrative claim, the administrative claim was reviewed by and concurred by the attorney's supervisor, the Associate General Counsel (Intellectual Property). While the supervisor did not sign the claim evaluation letter after his concurrence, his signature was not required by then current procedures. In the future, the Associate General Counsel (Intellectual Property) will assume responsibility and sign similar evaluation letters sent to claimants after his review and concurrence.

NASA has no other issues with the report. Thank you for your assistance in bringing this matter to our attention.

Sincerely,

A handwritten signature in dark ink, reading "Daniel R. Mulville". The signature is written in a cursive, flowing style.

Daniel R. Mulville  
Associate Deputy Administrator

(141436)

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